APRIL/MAY 2024

DCH13/GCH13 — PHYSICAL CHEMISTRY — I

Time : Three hours Maximum : 75 marks

Shanmuga Industries Arts & Science College T.V.Malai

SECTION A — (10 × 2 = 20 marks)

Answer ALL the questions.

1. Define Fugacity.
2. Explain the zeroth law of thermodynamics.
3. Compose the phase.
4. Recall the miscible liquid.
5. Tell any two uses of surfactants.
6. What is meant by colloids?
7. Discuss kinetics isotopes effect.
8. List the partition function.
9. Simplify the inhibition.
10. What are catalysts?

SECTION B — (5 × 5 = 25 marks)

Answer ALL the questions.

11. (a) Illustrate the standard free energy.

Or

(b) Find out the variation of fugacity with temperature and pressure.

12. (a) Explain the phenol-water system.

Or

(b) Interpret the congruent and incongruent.

13. (a) Discuss the critical micelle concentration.

Or

(b) Outline the micro-emulsion.

14. (a) Summarize the dielectric constant.

Or

(b) Elaborate the significance of entropy and activation.

15. (a) Organize the acid-base catalyst.

Or

(b) Compose the non-competitive and uncompetitive inhibition.

SECTION C — (3 × 10 = 30 marks)

Answer any THREE questions.

16. Determine the activity and activity coefficient by emf method.

17. Inference the two pairs of partially miscible liquids (water-ethyl alcohol-succinic nitrile) system.

18. Extend the zeta potential and electro osmosis.

19. Compile the Hammett and Taft equation.

20. Show the Michaelis - Menten equation and it's interpretation.

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